

IN THE CLAIMS:

Claim 1 (currently amended): A method for manufacturing a filler neck comprising the following steps:

forming a mouthpiece having a circumferential wall portion in a sectional circular shape,

forming a feeding pipe having a circumferential wall portion in a sectional circular shape,

fitting the circumferential wall portion of the mouthpiece in the circumferential wall portion of the feeding pipe in a closely overlapped condition, and

welding the circumferential wall portions at a welding area W defined in a range of an overlapped area S defined by the overlapped circumferential wall portions;

characterized by that:

the welding is executed by a seam welding utilizing an internal welding electrode and an external welding electrode;

the internal welding electrode is a cylinder having an outer diameter smaller than an inner diameter of the circumferential wall portion of the mouthpiece, which has an electrode region on a side face of the cylinder and is inserted in the mouthpiece to press the electrode region against an inner face of the circumferential wall portion of the mouthpiece at a predetermined pressure,

the external welding electrode is a flat disk having a thickness equivalent to a width of the welding area W, which has an electrode region on a circumference face of the disk and presses the circumference face thereof against an outer face of the circumferential wall portion of the feeding pipe at a predetermined pressure, and

both the welding electrodes together holding the overlapped circumferential wall portions of the mouthpiece and of the feeding pipe within the welding area W therebetween, allowing the mouthpiece and the feeding pipe, the internal welding electrode, and the external welding electrode to respectively rotate at synchronized peripheral speed, applying a predetermined electric current to the internal welding electrode and the external welding electrode, and to thereby integrate the mouthpiece and the feeding pipe.

Claim 2 (currently amended): [[A]] The method for manufacturing a filler neck according to Claim 1, wherein

a pressure by the internal welding electrode and the external welding electrode is set in a range of 25 through 50 MPa, and

a predetermined electric current ~~applying~~ applied to the internal welding electrode and the external welding electrode is in a range of 3,000 through 7,000 A.

Claim 3 (currently amended): [[A]] The method for manufacturing a filler neck according to Claim 1, wherein

the internal welding electrode is rotated with respect to a rotation axis thereof, ~~which~~ a friction clutch is built [[in]] into the internal welding electrode so that the friction clutch slips to prevent [[the]] difference in peripheral speed between the internal welding electrode and the external welding electrode.

Claim 4 (currently amended): [[A]] The method for manufacturing a filler neck according to Claim 1, wherein

the circumferential wall portion of the mouthpiece is formed by radially reducing the body of the mouthpiece through a tapered portion into a sectional circular shape,

an upper edge of the circumferential wall portion of the mouthpiece is defined to be a boundary portion between the tapered portion and the circumferential wall portion of the mouthpiece, and

thereby fits the circumferential wall portion of the mouthpiece in the circumferential wall portion of the feeding pipe in a manner where a peripheral edge of the feeding pipe abuts [[to]] the upper edge of the circumferential wall portion of the mouthpiece.

Claim 5 (currently amended): [[A]] The method for manufacturing a filler neck according to Claim 1, wherein

a partition of the mouthpiece is formed by radially and inwardly reducing a lower edge of the circumferential wall portion of the mouthpiece having a sectional circular shape as being of an orthogonal surface to the circumferential wall portion of the mouthpiece,

an annular rub functioning as a gun guide is integrally formed to be downwardly projected from the partition, and

~~thereby rotates~~ the internal welding electrode rotates while sliding an insulated nose face of the internal welding electrode contacting onto an inner face of the partition of the mouthpiece.